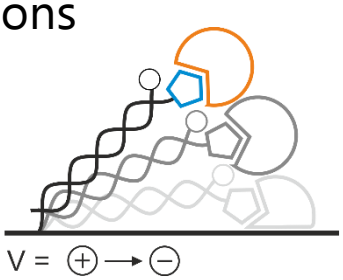
Biophysical Analysis of Molecular Interactions with Electro-Switchable Biosurfaces



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Electro-switchable biosurfaces (ESB), where biomolecules are set in motion by external stimuli, have recently emerged as powerful measurement modalities for the analysis of molecular interactions.

The switchSENSE technology uses electrically actuated DNA nanolevers on a chip for the real-time quantification of binding kinetics and affinities (fM K_Ds) of interactions between proteins, DNA/RNA, and small molecules. At the same time, hydrodynamic diameters of biomolecules and conformational changes are determined by analyzing the speed of the high-frequency "switching" motion, and thermodynamic parameters (energies, melting transitions) can be measured.

The analysis of complex binders like bispecific antibodies, DNA/RNA binding proteins, enzymatic activity, and conformational changes in proteins will be discussed.